IN THE CLAIMS:

No claims are amended herein.

1. (Previously four times amended) A metallization structure for a semiconductor device, comprising:

a substrate comprising a substantially planar upper surface; and

a conductive line for transmitting a signal laterally across said substrate, said conductive line comprising:

a metal layer defining a pattern on a portion of the substrate upper surface;

a single conducting layer overlying and substantially coextensive with the metal layer, said metal layer and said single conducting layer having substantially aligned sidewalls and said single conducting layer including an upper surface out of contact with any metal and defining an upper surface of said conductive line; and

metal spacers flanking and extending at least substantially to a height of the sidewalls of the single conducting layer and metal layer.

2. (original) The metallization structure of claim 1, further comprising a dielectric layer on the substrate upper surface and underlying the metal layer.

3. (original) The metallization structure of claim 2, wherein the dielectric layer is silicon oxide or BPSG.

4. (original) The metallization structure of claim 1, wherein the metal layer is a first metal layer comprising Ti, Ta, W, Co or Mo or alloys or compounds thereof, including TaN or TiN.

5. (original) The metallization structure of claim 4, further including a second metal layer disposed between the first metal layer and the substrate and comprising TiN, TiW, WN, or TaN.

6. (original) The metallization structure of claim 5, wherein the first metal layer comprises titanium or titanium nitride.

7. (original) The metallization structure of claim 1, wherein the metal layer is titanium or titanium nitride.

8. (Previously amended) The metallization structure of claim 1, wherein the single conducting layer is selected from the group comprising aluminum and copper.

9. (Previously amended) The metallization structure of claim 8, wherein the single conducting layer is an aluminum-copper alloy.

10. (original) The metallization structure of claim 1, wherein the metal spacers comprise at least one layer of Ti, Ta, W, Co or Mo, or alloys thereof or compounds thereof, including TaN and TiN.

11. (Previously twice amended) The metallization structure of claim 1, wherein the metal spacers are titanium or titanium nitride.

12. (Previously three times amended) The metallization structure of claim 1, further comprising a dielectric layer on the single conducting layer and having sidewalls aligned with said sidewalls of the single conducting layer, the metal spacers extending along the sidewalls of the dielectric layer.

13. (original) The metallization structure of claim 12, wherein the dielectric layer comprises a low dielectric constant material.

14. (original) The metallization structure of claim 13, wherein the dielectric layer is fluorine-doped silicon oxide.

15. (original) The metallization structure of claim 1, wherein the metal layer and the metal spacers comprise the same metal.

16. (Previously four times amended) A metallization structure for a semiconductor device, comprising:

a substrate having a metal layer extending over said substrate, said metal layer at least underlying a conductive line, said conductive line for transmitting a signal across said substrate;

a dielectric layer having an aperture therethrough defined by at least one sidewall and exposing the metal layer, said at least one sidewall of said aperture defining said conductive line;

a metal spacer abutting at least one sidewall of said at least one sidewall of the aperture and in contact with said dielectric layer, said metal spacer in contact with said underlying metal layer; and

a conductive layer in contact with said metal spacer, said conductive layer substantially filling a remaining portion of the aperture and having an upper surface substantially coincident with an upper surface of said dielectric layer.

17. (original) The metallization structure of claim 16, wherein the metal layer comprises tantalum, titanium, tungsten, cobalt, molybdenum, or an alloy or a compound of any thereof, including TaN and TiN.

18. (original) The metallization structure of claim 17, wherein the metal layer is titanium or titanium nitride.

19. (Previously amended) The metallization structure of claim 16, wherein the metal spacer includes at least one layer of metal comprising tantalum, titanium, tungsten, cobalt, molybdenum, or alloys or compounds thereof, including TaN and TiN.

20. (Previously amended) The metallization structure of claim 19, wherein the metal spacer is titanium or titanium nitride.

21. (original) The metallization structure of claim 16, wherein the substrate comprises a dielectric layer underlying the metal layer.

22. (original) The metallization structure of claim 21, wherein the dielectric layer underlying the metal layer is silicon oxide or BPSG.

23. (Previously amended twice) The metallization structure of claim 16, wherein the metal layer and the metal spacer comprise the same metal.

24. (original) The metallization structure of claim 16, wherein the metal layer is a first metal layer comprising Ti, Ta, W, Co or Mo or an alloy or a compound of any thereof, including TaN or TiN.

25. (original) The metallization structure of claim 24, further including a second metal layer disposed between the first metal layer and the substrate and comprising TiN, TiW, WN, or TaN.

26. (Previously amended) A metallization structure for a semiconductor device, comprising:

a substrate having a metal layer extending over said substrate, said metal layer at least underlying a conductive line, said conductive line for transmitting a signal across said substrate;

a dielectric layer having an aperture therethrough defined by at least one sidewall and exposing the metal layer, said at least one sidewall of said aperture defining said conductive line;

a metal spacer abutting at least one sidewall of said at least one sidewall of the aperture and in contact with said dielectric layer, said metal spacer in contact with said underlying metal layer;

a conductive layer in contact with said metal spacer, said conductive layer substantially filling a remaining portion of the aperture; and

at least one upper metal layer on the conductive layer comprising Ti, Ta, W, Co or Mo or an alloy or a compound of any thereof, including TaN or TiN, said at least one upper metal layer being disposed within said aperture laterally adjacent said metal spacer and having an upper surface substantially coincident with an upper surface of said dielectric layer and an uppermost extent of said metal spacer.

27. (original) The metallization structure of claim 26, wherein the at least one upper metal layer comprises a plurality of upper metal layers.

28. (Previously amended) The metallization structure of claim 26, wherein the at least one upper metal layer comprises titanium or titanium nitride.

Claims 29 – 99 (Previously canceled)

100. (original) The metallization structure of claim 2, wherein said dielectric layer extends completely underneath said conductive line.

101. (original) The metallization structure of claim 16, wherein said aperture contains conductive material.

102. (Previously three times amended) A structure for transmitting a signal across a semiconductor device, said structure comprising:

a substrate comprising a substantially planar upper surface; and

a conductive line extending over said upper surface and isolated therefrom by a dielectric layer at least underlying said conductive line, said conductive line comprising:

a metal layer above said dielectric layer, said metal layer defining a pattern on a portion of the substrate upper surface;

a single conducting layer overlying and substantially coextensive with the metal layer, said metal layer and said single conducting layer having substantially aligned sidewalls, wherein an upper surface of said single conductive layer is out of contact with any metal and defines an upper surface of said conductive line; and

metal spacers flanking and extending at least substantially to a height of the sidewalls of the single conducting layer and metal layer.

103. (original) The structure of claim 102, wherein the dielectric layer is silicon oxide or BPSG.

104. (original) The structure of claim 102, wherein the metal layer is a first metal layer comprising Ti, Ta, W, Co or Mo or alloys or compounds thereof, including TaN or TiN.

105. (original) The structure of claim 104, further including a second metal layer disposed between the first metal layer and the substrate and comprising TiN, TiW, WN, or TaN.

106. (original) The structure of claim 105, wherein the first metal layer comprises titanium or titanium nitride.

107. (original) The structure of claim 102, wherein the metal layer is titanium or titanium nitride.

108. (Previously amended) The structure of claim 102, wherein the single conducting layer is selected from the group comprising aluminum and copper.

109. (Previously amended) The structure of claim 108, wherein the single conducting layer is an aluminum-copper alloy.

110. (original) The structure of claim 102, wherein the metal spacers comprise at least one layer of Ti, Ta, W, Co or Mo, or alloys thereof or compounds thereof, including TaN and TiN.

111. (original) The structure of claim 102, wherein the metal spacers are titanium or titanium nitride.

112. (Previously amended) The structure of claim 102, further comprising a dielectric layer on the single conducting layer and having sidewalls aligned with said sidewalls of the single conducting layer, the metal spacers extending along the sidewalls of the dielectric layer.

113. (original) The structure of claim 112, wherein the dielectric layer comprises a low dielectric constant material.

114. (original) The structure of claim 113, wherein the dielectric layer is fluorine-doped silicon oxide.

115. (original) The structure of claim 102, wherein the metal layer and the metal spacers comprise the same metal.

116. (Previously three times amended) A structure for transmitting a signal laterally across a substrate of a semiconductor device, said structure comprising:

a substrate having a metal layer of a conductive line disposed thereon;

a dielectric layer above said metal layer, said dielectric layer having an aperture therethrough defined by at least one sidewall and exposing the metal layer, said aperture at least extending a length of said conductive line;

a metal spacer flanking at least one sidewall of said at least one sidewall of the aperture and in contact with said dielectric layer, said metal spacer in contact with said underlying metal layer; and

a conductive layer in contact with said metal spacer, said conductive layer substantially filling a remaining portion of the aperture and having an upper surface substantially coincident with an upper surface of said dielectric layer.

117. (original) The structure of claim 116, wherein the metal layer comprises tantalum, titanium, tungsten, cobalt, molybdenum, or an alloy or a compound of any thereof, including TaN and TiN.

118. (original) The structure of claim 117, wherein the metal layer is titanium or titanium nitride.

119. (original) The structure of claim 116, wherein the metal spacer includes at least one layer of metal comprising tantalum, titanium, tungsten, cobalt, molybdenum, or alloys or compounds thereof, including TaN and TiN.

120. (original) The structure of claim 119, wherein the metal spacer is titanium or titanium nitride.

121. (original) The structure of claim 116, wherein the substrate comprises a dielectric layer underlying the metal layer.

122. (original) The structure of claim 121, wherein the dielectric layer underlying the metal layer is silicon oxide or BPSG.

123. (original) The structure of claim 116, wherein the metal layer and the metal spacer comprise the same metal.

124. (original) The structure of claim 116, wherein the metal layer is a first metal layer comprising Ti, Ta, W, Co or Mo or an alloy or a compound of any thereof, including TaN or TiN.

125. (original) The structure of claim 124, further including a second metal layer disposed between the first metal layer and the substrate and comprising TiN, TiW, WN, or TaN.

126. (Previously amended) A structure for transmitting a signal laterally across a substrate of a semiconductor device, said structure comprising:

a substrate having a metal layer of a conductive line disposed thereon;

a dielectric layer above said metal layer, said dielectric layer having an aperture therethrough defined by at least one sidewall and exposing the metal layer, said aperture at least extending a length of said conductive line;

a metal spacer flanking at least one sidewall of said at least one sidewall of the aperture and in contact with said dielectric layer, said metal spacer in contact with said underlying metal layer;

a conductive layer in contact with said metal spacer, said conductive layer substantially filling a remaining portion of the aperture; and

at least one upper metal layer on the conductive layer and comprising Ti, Ta, W, Co or Mo or an alloy or a compound of any thereof, including TaN or TiN, said at least one upper metal layer being disposed within said aperture laterally adjacent said metal spacer and having an upper surface substantially coincident with an upper surface of said dielectric layer and an uppermost extent of said metal spacer.

127. (original) The structure of claim 126, wherein the at least one upper metal layer comprises a plurality of upper metal layers.

128. (original) The structure of claim 126, wherein the at least one upper metal layer comprises titanium or titanium nitride.

129. (original) The structure of claim 116, wherein said metal spacer extends substantially a height of said at least one sidewall.